

**U.S. PATENT APPLICATION**  
  
**for**  
  
**HERMETICALLY SEALED CONTAINER**

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## **HERMETICALLY SEALED CONTAINER**

### **FIELD OF THE INVENTION**

**[0001]** The present disclosure relates to a sealed container. More particularly, the present disclosure relates to a hermetically sealed container, such as a hermetic cosmetic compact container.

### **BACKGROUND**

**[0002]** Various sealed containers or cases exist for storing and holding different types of contents. Many of these containers are designed for holding contents which are volatile and evaporate or dry quickly when left exposed. Examples of such volatile contents include moistened wipes, cosmetics, water, and/or other solvent based products. In the cosmetic industry, manufacturers are attempting to make a hermetic cosmetic container because the cosmetic contents often contain a volatile chemical component that requires hermetic storage to prevent or inhibit drying, hardening, and cracking of the components.

**[0003]** In general, compact containers hold cosmetics including makeups such as powders, crèmes, eye shadows, eyeliners, lip-colors, or other beauty aids. A base section of many compacts often includes a metal pan for containing cosmetics. Alternatively, the cosmetics can be directly stored in a cavity in the base section. Some compacts are arranged as a one-piece unit so that one hand opens and holds the compact, while the other hand applies the cosmetic to the skin surface of the face. For example, some compact containers include a lid or a cover section hingeably

coupled to a base or a container section. Either the cover section or the base section can be pivoted about the hinge to obtain the closed configuration of the compact, thereby providing a convenient storage device.

**[0004]** Cosmetic containers may also be in the form of a container with a screw-on cap. With a screw-on cap design, the user must contend with two separate pieces, which can make applying the cosmetic a difficult task. For example, the user must unscrew the cap and place it somewhere so that one hand can hold the container that stores the cosmetic, while the other hand is free to apply the cosmetic to the skin surface of the face. The user has to either hold the cap when applying the cosmetic or lay the screw-on cap somewhere during the process of applying the cosmetic. A separate cap also increases the probability for the cap to be misplaced or lost. Without the screw-on cap, the unused portion of the cosmetic remaining in the container will dry, harden and crack, generally resulting in a product of deteriorated quality. As a result, the user incurs additional expense by having to purchase replacement cosmetic.

**[0005]** Another problem with existing screw-on cosmetic containers is that a user may not be aware that the screw-on cap is not properly closed, e.g., screwed on the container. If the cap is not properly placed on the container, more air flow will be permitted allowing volatiles to escape. This likely results in a low-quality cosmetic that is dried, hardened, and/or cracked.

**[0006]** Another problem with existing cosmetic containers is that some containers require complicated mechanisms to create a hermetic seal. For example, instead of a seal being created substantially between two surfaces, some cosmetic containers utilize the interaction of numerous surfaces and angles to create a hermetic seal. Some containers further

require some type of curve or bend along portions of the sealing surfaces to create a "snap-fit" to secure a container in a closed configuration.

Accordingly, a significant amount of force is often required to open and close certain cosmetic containers.

**[0007]** Thus, there is a need for an improved container that is inexpensive and simple-to-use while being capable of effecting a hermetic seal. Further, there is a need for an improved hermetically sealed compact container that can be manufactured as a one-piece unit and can be simply opened and closed. Further, there is a need for an improved hermetically sealed container that does not require complicated closing mechanisms involving multiple surfaces or "snap-fits" to lock the container in a closed configuration.

**[0008]** It would be desirable to provide a container having any one or more of these or other advantageous features.

### **SUMMARY**

**[0009]** The present disclosure relates to a cosmetic container. The cosmetic container comprises a first section including a first interface and a second section for holding a cosmetic substance. The second section includes a second interface. One of the first interface and the second interface comprises a groove and the other of the first and second interface comprises a peripheral rim. The groove is defined by a peripheral wall and a peripheral edge, the peripheral wall comprising a first surface angled towards the peripheral edge. The cosmetic container may include an outer body coupled about the first section and second section. The first section and the second section may be integral and joined by a living hinge. Other coupling devices may be used.

**[0010]** The present disclosure further relates to a container for containing articles. The container comprises a first section and a second section. The first section is capable of engaging the second section to form a hermetic seal. The first section has a first cavity that is surrounded by a first peripheral wall and a peripheral edge. The first peripheral wall has a first surface that is angled toward the peripheral edge. The second section has a second peripheral wall capable of sliding between the first peripheral wall and the peripheral edge to form the hermetic seal. The container may include a first end on the first peripheral wall wherein the first end is angled with respect to the vertical axis. The peripheral wall may be made from a substantially flexible plastic material.

**[0011]** The present disclosure further relates to a method of making a cosmetic container. The method comprises providing a first section including a first interface and providing a second section for holding a cosmetic substance. The second section includes a second interface. The method also comprises providing a groove on one of the first interface and the second interface and providing a peripheral rim on the other of the first interface and the second interface. The groove is defined by a peripheral wall and peripheral edge. The peripheral wall comprises a first surface angled towards the peripheral edge of the peripheral rim. The peripheral wall may be flexible and the first interface and the second interface may be circular.

**[0012]** The present disclosure further relates to a container for cosmetic material comprising a means for containing at least one cosmetic material within a container that may be selectively configured between an open position and a closed position, and a means for providing at least one

interface capable of creating a hermetic seal when the container is in the closed position, the interface having an angled surface.

**[0013]** The present disclosure further relates to a container comprising a first section and a second section. The first section is capable of engaging the second section to form a hermetic seal. The first section has a cavity for containing a substance comprising a volatile compound or a product comprising a volatile component contained therein. The cavity is surrounded by a first peripheral wall and a peripheral edge, the first peripheral wall having a first surface that is angled toward the peripheral edge. The second section has a second peripheral wall capable of sliding between the first peripheral wall and the edge to form a hermetic seal. The first and second sections may be integral and joined by a living hinge.

#### **DESCRIPTION OF THE DRAWINGS**

**[0014]** FIGURE 1 is a perspective view of a closed cosmetic compact container according to an exemplary embodiment;

**[0015]** FIGURE 2 is a perspective view of the cosmetic compact container illustrated in FIGURE 1 in an open configuration, demonstrating an integral two-piece insert contained therein;

**[0016]** FIGURE 3 is a cross-sectional view of the closed cosmetic compact container illustrated in FIGURE 1, taken along line 3--3;

**[0017]** FIGURE 4 is a top perspective view of the integral two-piece insert illustrated in FIGURE 2;

**[0018]** FIGURE 5 is a bottom perspective view of the integral two-piece insert illustrated in FIGURE 4;

**[0019]** FIGURE 6 is a cross-sectional view of the insert illustrated in FIGURE 4 about line 6--6;

**[0020]** FIGURE 7A is an enlarged, partial cross-sectional view of a peripheral rim illustrated in FIGURE 4;

**[0021]** FIGURE 7B is an enlarged, partial cross-sectional view of a lip according to an alternative embodiment;

**[0022]** FIGURE 8A is an enlarged, partial cross-sectional view of a groove illustrated in FIGURE 4;

**[0023]** FIGURE 8B is an enlarged, partial cross-sectional view of a groove according to an alternative embodiment;

**[0024]** FIGURE 9A is an enlarged, partial cross-sectional view of the peripheral rim and groove illustrated in FIGURES 7A and 8A in a closed configuration;

**[0025]** FIGURE 9B is an enlarged, partial cross-sectional view of the lip and groove illustrated in FIGURES 7B and 8B in a closed configuration.

**[0026]** FIGURE 10 is a cross-sectional view of a cosmetic container according to an exemplary embodiment;

**[0027]** FIGURE 11 is a perspective view of the cosmetic container illustrated in FIGURE 10 in an open configuration;

**[0028]** FIGURE 12 is a perspective view of the cosmetic container illustrated in FIGURES 10 and 11 in a closed configuration; and

**[0029]** FIGURE 13 is a perspective view of a container in a partially open configuration according to an exemplary embodiment.

#### **DETAILED DESCRIPTION**

**[0030]** With reference to FIGURES 1, 2, and 3, a cosmetic container or compact 10 is shown. Compact 10 is a cosmetic container for holding a cosmetic substance, such as a powder, crème, foundation, lip-gloss, eye shadow, eyeliner, or other beauty aid. In particular, compact 10 is

preferably a cosmetic container for containing a color-fast, e.g., a nonfading and rub-resistant, cosmetic with a hermetic seal.

**[0031]** Referring to FIGURE 1, a compact 10 in a closed configuration is shown according to a preferred embodiment. Compact 10 includes an exterior shell which is comprised of a top or cover section 12 coupled (FIGURE 2) to a bottom or a base section 14. The cover section 12 may be permanently or removably coupled to the base section 14. An example of a permanent coupling is the integrated hinge shown in FIGURE 2. Compact 10 also includes an opening interface 16. Interface 16 includes a first member 18 and a second member 20. Opening interface 16 facilitates opening of compact 10 when first member 18 engages second member 20. Alternatively, opening interface 16 can include a pivoting member similar to conventional shoe polish canisters.

**[0032]** As shown in the embodiment of FIGURE 1, when an external downward force is applied, such as, by hand, to cover section 12 to effect pivotal motion in a direction toward base section 14, compact 10 achieves a closed configuration. When a separate cover section 12 and base section 14 are employed, compact 10 achieves a closed configuration as the two pieces are brought together. It may be desirable for compact 10 to emit the traditional snapping sound associated with the closing of a conventional compact. Opening interface 16 can also be configured to perform a latching operation for compact 10. Although compact 10 is shown in a quadrangular shape, other geometries, such as oval, circular, hexagonal, and so forth, can also be used.

**[0033]** With reference to FIGURE 2, compact 10 is shown in an open configuration. Compact 10 further includes a two-piece insert 22. Insert 22 preferably includes a first section 24 coupled to a second section

26. As shown in the illustrated embodiment, first section 24 of insert 22 is pivotally coupled to second section 26 via a living hinge 28. According to various alternative embodiments, first section 24 and second section 26 may be formed separately, integrally, etc. and be either permanently or removably coupled together according to any suitable method (e.g., fasteners, any variety of hinge mechanisms, screws, adhesives, etc.). Insert 22 can be shaped in accordance with compact 10 and sized to fit within the combination of sections 12 and 14. Insert 22 is preferably made of resins (plastic or otherwise), including injection moldeable thermoplastic resin with relatively high flexibility, such as polypropylene (PP), polyethylene (PE), polyvinylchloride (PVC), or thermo-plastic elastomers (TPE). Alternatively, any other suitable material may be used.

**[0034]** First section 24 of insert 22 may optionally include a cavity 30 as shown in FIGURE 4. In one embodiment, a mirror can be disposed within cavity 30 for viewing the face when applying the cosmetic. Similarly, second section 26 has a cavity 32 defined by a peripheral surface 34. Peripheral surface 34 includes a peripheral rim 36. Peripheral rim 36 may be attached to peripheral surface 34 according to any suitable method (e.g., fasteners, screws, adhesives, etc.). According to a preferred embodiment, peripheral rim 36 is integral with (e.g., continuous) with peripheral surface 34. This may be accomplished by a molding process. In FIGURE 4, the peripheral rim 36 circumferentially extends above a surface 35 of second section 26. According to an exemplary embodiment, peripheral rim melds into a terminal, outwardly-protruding lip 38. According to various other embodiments, lip 38 is optional. Cavity 32 is preferably configured to hold the color-fast cosmetic. Alternatively, instead of cavity 32, second section 26 can include an aperture configured such that a pan prefilled with

cosmetic can be disposed therein. Other embodiments may have alternative shaped cavities other than circular including polygonal shapes such as rectangular or square.

**[0035]** FIGURE 3 is a cross-sectional view of compact 10 in a closed configuration, taken along line 3-3 of FIGURE 1. Cavity 30 within section 24 is shown with a mirror 37 disposed therein. Cavity 32 is shown in an empty state. Compact 10 also includes interface gaps 40 and 42. Interface gap 40 is disposed between an internal surface 11 of cover 12 and an exterior surface 23 of first section 24 of insert 22. Interface gap 42 is disposed between an internal surface 13 of base section 14 and an external surface 25 of second section 26 of insert 22. Interface gaps 40 and 42 are configured to be large enough to allow expansion of first section 24 and second section 26, respectively, of insert 22.

**[0036]** FIGURES 4 and 5 show insert 22 in a fully extended, opened configuration. In particular, FIGURE 4 is a top perspective view of insert 22, whereas FIGURE 5 is a bottom perspective view. In this embodiment, the first section includes a groove 48, although in other embodiments, the second section may include the groove 48. The groove 48 is defined between a peripheral edge 33 of cavity 30 and peripheral wall 44. Groove 48 is configured to receive peripheral rim 36 when insert 22 is in a closed configuration (e.g., when first section 24 engages second section 26), desirably effecting a hermetic seal. Insert 22 may not require a clasp or fastener to sustain a closed configuration because the hermetic seal may be designed to maintain insert 22 in the closed configuration

**[0037]** Figure 5 shows the bottom perspective view of insert 22. The perimeter of first section 24 and second section 26 is defined by a continuous peripheral rim 50 that overhangs in the direction toward external

surfaces 23 and 25, respectively. Rim 50 can be utilized to secure or snap insert 22 within sections 12 and 14. Rim 50 is preferably configured to span a height of about 0.05 to about 0.5 inches. Other embodiments may not include this feature.

**[0038]** In one embodiment, when in the fully extended configuration, insert 22 spans a length of approximately 2-12 inches, having a respective approximate 1-6 inch length for both first section 24 and second section 26. Alternatively, insert 22 can have other dimensions complementary to fit any sized compact 10.

**[0039]** With reference to FIGURE 6, a cross-sectional view of insert 22 in the fully extended configuration is shown, taken about line 6--6 of FIGURE 4. Living hinge 28 is shown fully extended and cavity 30 and cavity 32 both appear in an empty state. Lip 38 is shown protruding outwardly from peripheral rim 36. With reference to first section 24, groove 48 appears between peripheral wall 44 and peripheral edge 33.

**[0040]** Both FIGURES 7A and 8A are enlarged, partial cross-sectional views of different aspects of insert 22. More specifically, FIGURE 7A shows an enlarged, partial cross-sectional view of peripheral rim 36. FIGURE 8A is an enlarged, partial cross-sectional view showing groove 48 disposed between peripheral wall 44 and peripheral edge 33. FIGURE 8A further shows that peripheral wall 44 terminates in a free end 45.

**[0041]** In one embodiment, the height of peripheral rim 36 (FIGURE 7A) is sufficient to fit within the groove 48. For example, in a commercial embodiment, peripheral rim 36 may have a height of about 0.1 to 0.5 inches, preferably about 0.12 inches, with a width of about 0.02 to 0.1 inches, preferably about 0.035 inches. Groove 48 is defined by multiple surfaces and components including peripheral wall 44, surface 64, and

peripheral edge 33. The total area of groove 48 is determined by the measurements and dimensions of these components.

[0042] Peripheral wall 44 (FIGURE 8A) may have a height of about 0.03 to 0.2 inches and a thickness of about 0.01 to 0.03 inches. According to a preferred embodiment, peripheral wall 44 has a height of approximately 0.07 inches and a thickness of approximately 0.016 inches. A free end 45 of wall 44 may be angled about 10 to 60 degrees with respect to the vertical axis. According to a preferred embodiment, free end 45 is angled at a 30 degree angle with respect to a vertical axis. The surface 49 of wall 44 bordering groove 48 may be angled toward groove 48 about 5 to 25 degrees, and more desirably 10 to 20 degrees. According to a preferred embodiment, surface 49 is angled toward groove 48 at an angle that is approximately 14 degrees with respect to the vertical axis. A surface 51 may be at any angle or parallel to the vertical axis.

[0043] Alternatively, other dimensions can be used. For example, this disclosure contemplates various shapes for surface 64 (e.g., curved, rectangular, triangular, etc.). Accordingly, the given dimensions and descriptions are exemplary only and do not limit the scope of the claims.

[0044] The closing and opening of insert 22 is discussed as follows. In one embodiment, insert 22 is closed by applying a downward force, such as, by hand, to first section 24 to effect a pivotal motion of first section 24 toward second section 26. More specifically, as a result of the applied downward force on first section 24, hinge 28 folds to close first section 24 onto second section 26.

[0045] In the process of closing insert 22, groove 48 receives peripheral rim 36 between peripheral wall 44 and peripheral edge 33 (FIGURES 4, 6, 8A, and 9A), thereby effecting a hermetic seal at the

interface (FIGURE 9A). The seal can be formed between peripheral rim 36 and peripheral wall 44 and/or rim 36 and edge 33. According to a preferred embodiment, the distance between a first point and a second point of surface 49 of peripheral wall 44 is no less than the distance between a corresponding first point and a corresponding second point of peripheral surface 34 of peripheral rim 36. For example, as illustrated in FIGURE 4, the distance between points 47 on surface 49 may be greater than or equal to the distance between two corresponding points 43 on peripheral surface 34. Moreover, peripheral wall 44 biases peripheral rim 36 against peripheral edge 33. Peripheral rim 36 thereby fits into groove 48, thus securing the hermetic seal and optionally maintaining insert 22 in the closed configuration.

**[0046]** The angle of surface 49 toward groove 48 creates an improved hermetic seal. As rim 36 is moved into groove 48, rim 36 first makes contact with free end 45 and chamfer edge 52. The angled shape of free end 45 and the curved shape of chamfer edge 52 direct rim 36 into position for placement within groove 48. As rim 36 continues to push upward against free end 45, wall 44 begins to move outward away from groove 48. The angle of wall 44 helps create biasing force between rim 36 and wall 44 that maintains a hermetic seal.

**[0047]** Once rim 36 is positioned within groove 48, the angle of wall 44 provides enough tension to keep rim 36 in groove 48. Compact 10 may not require a latch to maintain insert 22 in the closed configuration. For example, the angle of peripheral wall 44 holds peripheral rim 36 in place to maintain the seal. As insert 22 obtains the closed configuration, the evacuated air may make a distinctive audible sound, indicating that the hermetic seal has been established.

**[0048]** To open insert 22, a pushing or pulling force is applied, such as, by hand, to first section 24 in a direction away from second section 26. In the process of separating or disengaging first section 24 from second section 26 from the closed configuration of insert 22, peripheral rim 36 is removed from within groove 48, thereby disrupting, e.g., breaking, the hermetic seal formed at the interface between peripheral surface 34 and peripheral wall 44. As first section 24 is disengaged from second section 26, another audible sound may be emitted, indicating the hermetic seal has been broken. As hinge 28 unfolds, first section 24 is further moved in a direction away from second section 26.

**[0049]** Both FIGURES 7B and 8B are enlarged, partial cross-sectional views of another embodiment of insert 22. More specifically, FIGURE 7B shows an enlarged, partial cross-sectional view of lip 38 extending from peripheral rim 36. FIGURE 8B is an enlarged, partial cross-sectional view showing groove 48 disposed between peripheral wall 44 and peripheral edge 33. FIGURE 8B further shows that peripheral wall 44 terminates in a free end 45.

**[0050]** As shown in FIGURE 8B, peripheral edge 33 includes a chamfer edge 52, a bulge 54 protruding in a direction toward groove 48, and an indentation 56 pointed in a direction away from wall 44. According to other embodiments, peripheral edge 33 may not include chamfer edge 52 and/or indentation 56. According to an exemplary embodiment, bulge 54 may extend circumferentially around peripheral edge 33. According to various other embodiments, one or more bulges 54 may be located at selective locations around peripheral edge 33.

**[0051]** In one embodiment, lip 38 may have a width of about 0.02 to 0.1 inches, preferably about 0.045 inches and a height of about 0.02 to

0.1 inches, preferably about 0.05 inches. Lip 38 may also be designed to be spherical with a radius of about 0.005 to 0.1 inches, preferably about 0.01 inches at an end 72. However, the lip 38 is not intended to be limited to such design. For example, a lip 38 may have a variety of other suitable dimensions.

**[0052]** According to an exemplary embodiment, bulge 54 of peripheral edge 33 may be curved with a radius of about 0.005 to 0.03 inches. According to a preferred embodiment, bulge 54 has a radius of approximately 0.01 inches. A wall 62 associated with indent 56 may be provided at an angle in the range of about 10 to 60 degrees from the vertical axis. According to a preferred embodiment, wall 62 is provided at an angle of about 30 degrees from the vertical axis. According to an exemplary embodiment, groove 48 may have a width of about 0.025 to 0.125 inches, preferably about 0.05 inches. According to an exemplary embodiment, bulge 54 may be from about 0.03 to 0.1 inches from a surface 64 and terminates from about 0.06 to 0.25 inches from surface 64. According to a preferred embodiment, bulge 54 is about 0.05 inches from surface 64 of groove 48 and terminates at a distance of about 0.11 inches from surface 64.

**[0053]** Alternatively, other dimensions can be used. For example, this disclosure contemplates various shapes for surface 64 (e.g., curved, rectangular, triangular, etc.). Accordingly, the given dimensions and descriptions are exemplary only and do not limit the scope of the claims.

**[0054]** In the process of closing insert 22, groove 48 receives peripheral rim 36 between peripheral wall 44 and peripheral edge 33 (FIGURES 4, 6, 8B, and 9B), thereby effecting a hermetic seal at the interface (FIGURE 9B). The seal can be formed between peripheral surface

34 and peripheral wall 44 or rim 36 and edge 33. Moreover, bulge 54 of peripheral edge 33 pushes peripheral rim 36 to bias peripheral surface 34 towards peripheral wall 44. Even further, lip 38 of peripheral rim 36 fits into indentation 56 of peripheral edge 33, thus securing the hermetic seal and maintaining insert 22 in the closed configuration.

**[0055]** Once lip 38 is positioned within groove 48, the angle of wall 44 provides enough tension to keep lip 38 in groove 48. Compact 10 may not require a latch to maintain insert 22 in the closed configuration. As insert 22 obtains the closed configuration, the evacuated air makes a distinctive audible sound, indicating that the hermetic seal has been established.

**[0056]** According to an exemplary embodiment, insert 22 (shown in FIGURE 2) is manufactured using an injection-molding process. A molten thermoplastic material is injected under high pressure into a mold cavity. After a cooling cycle, the plastic material solidifies, the mold opens, and the insert is ejected. Molds can be single-cavity molds, producing one part per mold cycle, or multi-cavity molds, producing multiple parts per mold cycle. The molten plastic can be injected through only one injection point in either first section 24 or second section 26 of insert 22, in which case the material flows through a living hinge 28 into the other of section 24 or section 26. According to other embodiments, each of sections 24 and 26 may contain an injection point.

**[0057]** Polypropylene is the preferred material for this application. Polypropylene has many advantages including the following: (a) it flows easily during injection and fills thin walls; (b) it forms living hinges capable of withstanding millions of cycles; (c) it is flexible enough to allow deformation during closing of the container; (d) it has a very low water-vapor-

transmission-rate (MVTR), which means that weight loss of water and hydrophilic substances through the walls of the container is minimal; (e) it has very good chemical resistance to a wide range of chemicals used in cosmetic formulas; and (f) it is inexpensive. However, according to other embodiments, other types of materials may be used.

**[0058]** External components of the compact (such as the cover and base) are typically also injection molded. Typical thermoplastic materials used for the external components include styrenics (e.g., acrylonitrile butadiene styrene, styrene acrylonitrile, polystyrene, medium impact polystyrene, high impact polystyrene), acrylic (polymethylmethacrylate) or other suitable resins. The main purpose of the external components is to provide stiffness to the assembled compact and provide more esthetically pleasing surfaces than can be achieved with polypropylene.

**[0059]** Referring to FIGURE 10, a cross-sectional view of cosmetic container 110 is shown. Container 110 preferably includes a first section 124 coupled to a second section 126. As shown in the illustrated embodiment, first section 124 of container 110 is pivotally coupled to second section 126 via a living hinge 128. According to various alternative embodiments, first section 124 and second section 126 may be formed separately, integrally, etc. and be either permanently or removably coupled together according to any suitable method (e.g., fasteners, moldings, screws, adhesives, etc.). Container 110 can be shaped and sized to fit within containers of various sizes. Container 110 is preferably made of resins (plastic or otherwise), including injection moldable thermoplastic resin with relatively high flexibility, such as polypropylene (PP), polyethylene (PE), polyvinylchloride (PVC), or thermo-plastic elastomers (TPE). Alternatively, any other suitable material may be used.

**[0060]** First section 124 of container 110 may optionally include a cavity 130 as shown in FIGURE 10. In one preferred embodiment, a mirror can be disposed within cavity 130 for viewing the face when applying the cosmetic. Similarly, second section 126 has a cavity 132 defined by a peripheral surface 134. Peripheral surface 134 includes a peripheral rim 136. Peripheral rim 136 may be attached to peripheral surface 134 according to any suitable method (e.g., fasteners, screws, adhesives, etc.). According to a preferred embodiment, peripheral rim 136 is integral with (e.g., continuous) with peripheral surface 134. This may be accomplished by a molding process. Cavity 132 is preferably configured to hold the cosmetic. Alternatively, instead of cavity 132, second section 126 can include an aperture configured such that a pan prefilled with cosmetic can be disposed therein. Other embodiments may have alternative shaped cavities other than circular including polygonal shapes such as rectangular or square.

**[0061]** FIGURE 11 is a perspective view of container 110. In this embodiment, the first section 124 includes a groove 148, although in other embodiments, the second section 126 may include the groove 148. The groove 148 is defined between a peripheral edge 133 of cavity 130 and peripheral wall 144. Groove 148 is configured to receive peripheral rim 136 when container 110 is in a closed configuration (e.g., when first section 124 engages second section 126), desirably effecting a hermetic seal. Container 110 may not require a clasp or fastener to sustain a closed configuration (as shown in FIGURE 12) because the hermetic seal can maintain container 110 in the closed configuration. In alternative embodiments, it may be desirable to include a bulge, lip or indentation similar to what is shown in FIGURES 7B, 8B, and 9B. Living hinge 128 is shown fully extended and cavity 130 and cavity 132 both appear in an empty state. With reference to first section

124, groove 148 appears between peripheral wall 144 and peripheral edge 133.

**[0062]** In one embodiment, when in the fully extended configuration, container 110 spans a length of approximately 2-12 inches, having a respective approximate 1-6 inch length for both first section 124 and second section 126. Alternatively, container 110 can have other dimensions complementary to fit any sized compact.

**[0063]** Referring to FIGURE 13, a container 210 is shown according to an exemplary embodiment. Container 210 is similar to compacts described above except that container 210 may be used to hold or contain any number of other articles requiring hermetic seals (e.g., wetwipes, chemicals, food, photographs, etc.).

**[0064]** FIGURE 13 shows container 210 in a partially open configuration according to an exemplary embodiment. Container 210 includes an exterior shell which is comprised of a top or cover section 212 hingeably coupled to a bottom member or a base section 214. In this embodiment, the top section 212 includes a groove 248, although in other embodiments, the base section 214 may include the groove 248. The groove 248 is defined between a peripheral edge 233 of cavity 230 and peripheral wall 244. Groove 248 is configured to receive peripheral rim 236 when container 210 is in a closed configuration (e.g., when top section 212 engages base section 214), desirably effecting a hermetic seal. Container 210 may not require a clasp or fastener to sustain a closed configuration because the hermetic seal can maintain container 210 in the closed configuration. In alternative embodiments, it may be desirable to include a bulge, lip or indentation similar to what is shown in FIGURES 7B, 8B, and 9B. Living hinge 228 is shown partially extended and cavity 230 and cavity

232 both appear in an empty state. With reference to top section 212, groove 248 appears between peripheral wall 244 and peripheral edge 233. Other types of containers are also contemplated.

**[0065]** The advantages of the containers described herein are shown in the following example. A 24-hour water weight loss test was conducted on several known cosmetic containers. To begin the test, the empty test engines were weighed. 10 grams of water was then placed in the inserts (e.g., engines). The inserts were then closed and weighed again. After that, the filled inserts were placed in a humidity-controlled oven at 50 degrees Celsius and 60 percent relative humidity. After 24 hours, the inserts were weighed again. The 24-hour weight loss in percent is calculated as follows:  $(\text{initial filled weight} - \text{filled weight after 24 hours}) / (\text{initial filled weight} - \text{empty weight}) \times 100 \%$ . The results of the test are shown in the following table:

Product	24-Hour Weight Loss (%)
Manufacturer A	0.55
Manufacturer B	0.14
Manufacturer C	0.16
Disclosed Cosmetic Container	0.05-0.08

Furthermore, the disclosed cosmetic container showed a decrease in the 24-hour weight loss to about 0.02 to 0.04 percent when left in the oven over the course of about 1-2 weeks.

**[0066]** It is important to note that the above-described embodiments are illustrative only. Although the invention has been described in conjunction with specific embodiments thereof, those skilled in the art will appreciate that numerous modifications are possible without materially

departing from the novel teachings and advantages of the subject matter described herein. Accordingly, all other such modifications are intended to be included within the scope of the present invention as defined in the appended claims. The order or sequence of any process or method steps may be varied or re-sequenced according to alternative embodiments. In the claims, any means-plus-function clause is intended to cover the structures described herein as performing the recited function and not only structural equivalents but also equivalent structures. Other substitutions, modifications, changes and omissions may be made in the design, operating conditions and arrangement of the preferred and other exemplary embodiments without departing from the spirit of the present invention.